

# TEACHER LEADER COMPETENCY DEVELOPMENT: A PANACEA FOR A VUCA WORLD?

Zainab binti Ali<sup>1</sup>, Suzana Abd Latif<sup>2</sup>

<sup>1,2</sup> Institut Aminuddin Baki, Ministry of Education, Malaysia.  
Email: [zainab@iab.edu.my](mailto:zainab@iab.edu.my)<sup>1</sup>, [suzanaabdl@iab.edu.my](mailto:suzanaabdl@iab.edu.my)<sup>2</sup>

DOI: 10.47750/pnr.2022.13.509.676

## Abstract

The rate of change today, be it in political, economic, social or technological realm that impacts and disrupts many of today's organization, is to say the least, a daunting challenge. The chain of unprecedented events such as pandemic Covid-19, massive floods and other environmental disasters happening both within local and global contexts, are some of the lists of difficult challenges that characterized a VUCA world. As the challenges seem mountainous to school leadership, from navigating the quarantine guidelines, school closure and re-opening, remote learning, student engagement, and constant change, many are of the belief that teachers need to be empowered as leaders in order to move from the survival mode to a more thriving school environment. As such, there is a need to rethink on the development of teacher leaders' competencies against the background of a VUCA world by first, identifying the crucial competencies that need to be developed among teacher leaders. Thus, this paper aims to promote teacher leadership competency model that suits a VUCA context by integrating multiple perspectives and researches on teacher leadership, leadership development, the VUCA world and the teacher leadership competency model. The belief is that through a proper teacher leader development it will help to inculcate VUCA -readiness and responsive leadership among teacher leaders which consequentially enhance school effectiveness.

**Keywords:** teacher leadership, VUCA world, competency model, VUCA-readiness, school effectiveness.

## Introduction

Not so long ago, many of us have never heard of the Coronavirus, which has turned into a pandemic, and caused significant disruption to the provision of educational opportunities due to lockdown, travel restrictions, school closures and re-openings, and quarantine. Many were taken by surprise and struggle to keep things as the way they were before the pandemic. What we are facing is actually an example of a VUCA environment. The question is "how should school leaders lead and manage in this unprecedented moment of crisis and emergency?" "How should they strive to attain and realize their educational and organizational goals in the midst of a crisis?" "How will it affect student learning and eventually their academic performance?" "What measures should be taken to ensure progression of learning for all students?" These and many more other issues pertaining to student learning and outcomes undoubtedly point to the need of different set of skills, knowledge and attitude in order to navigate effectively in a VUCA world.

As school leaders continue to face setbacks, disruptions and challenges in an environment which is volatile, uncertain, complex and ambiguous, leadership needs to be understood as a collective and collaborative effort. This is due to the fact that under the VUCA circumstances each and every principal and teacher need to create plans to make teaching and learning possible and ensure that school continues to operate even when nobody is in the building. Thus, the role of teachers as significant leaders who are able to understand the complex process of education and the unavoidable changes that take place and able to deal with the ambiguities and uncertainties of a VUCA environment, needs to be enhanced. Moreover, as teacher first, leader second it is crucial that they are

able to grasp the many ways teaching could be done innovatively to provide students with a quality education albeit in disruptive times.

In relation to this, they will need to undergo professional development programs to enhance their teaching prowess as well as their leadership qualities. Nevertheless, it is crucial at this juncture to first determine the right competencies that need to be developed in order to prepare them well to face the VUCA challenges. Interestingly, there are quite a significant number of teacher leadership framework and models that are readily available that one can choose from as guidelines to develop leadership competencies among teachers. However, they are developed for a more stable environment whereby certainties, plans, schedules are the order of the day. Hence, there is a compelling need for the development of a new teacher leadership competency model that aptly identify the crucial competencies that need to be developed under today's VUCA circumstances.

Therefore, this paper focuses squarely on the promotion of conducive environmental and organizational support for teacher leadership to flourish within and among members of professional learning communities in an educational organization. Our contention is that it should start first with a conceptual idea that illustrate the leadership capacities that teacher leaders need to employ in their day-to-day leadership and teaching endeavors as well as other problem-solving and decision-making endeavours that concern both the students and the school. As such, we intent to propose a model of teacher leadership competency that will serve as a guideline for designing a suitable leadership development program as well as triggers further inquiry about teacher leadership.

## Teacher leadership: its conceptualization

Teacher leadership has received considerable scholarly research attention over the past several decades ( Buckner & McDowelle, 2000; Crowther, Ferguson & Hann, 2009; Muijs & Harris, 2006.; Katzenmeyer & Moller , 2009; Murphy, 2005), both in local and global contexts. There is no single definition, theory, or measure driving this body of work, rather, researchers have adopted a number of different approaches toward identifying the competencies of teacher leaders (Angelle & Hart, 2011, Schott et al., 2020; Wener & Campbell, 2017). However, Angelle and Hart (2011) are of the belief that the “disparity in views is helpful in understanding not only perceptions but also misperceptions of the work of teacher leaders as practiced in the field” (p.142). Cheung, Rheinart, Stone and Little (2018), for instance, associates teacher leadership with the roles of teacher leaders in implementing innovative approaches and assisting their peers to understand how it fits with their expertise, skills and values.

In addition, Bowman (2004) identifies teacher leaders as those who maintain focus on student learning, continue to sharpen their skills and knowledge, good at facilitating others, able to engage others in meaningful exploration of vision, work with a sense of integrity and skilled in planning and organizing. Harris and Jones (2019) emphasizes the role of teacher leaders as crucial in influencing the process of educational change and school transformations. While Thornton, Langrall, Jones and Swafford (2001), view the role of teacher leaders as important in initiating professional development, addressing curriculum development or issues as well as in communicating about change. Katzenmeyer and Moller (2009), on the other hand, postulate that teacher leaders' focus is on teaching and learning rather than on school management. Some other definitions or conceptualization of teacher leadership are as shown in Table 1.

Table 1 : Definitions of teacher leadership

### Teacher leadership

#### Researcher

- York-Barr and Duke, (2004)

#### Definition and assumption

- teacher leadership as a process carried out by teachers, both individually and in groups, in influencing peers, principals and other

school members to improve the quality of teaching and learning for better student learning outcomes.

- Katzenmenyer & Moller, (2001)
  - Wenner & Cambell, (2017)
  - Nguyen, Harris & Ng, (2019)
  - Shah, (2016)
  - Boyaci & Oz, (2017)
- teacher leadership highlights the ability to create a comfortable and motivating learning environment.
  - teacher leadership aims to promote learning and achievement, including to develop the school organization altogether.
  - teacher leadership seek to enhance teaching quality, school effectiveness and student learning.
  - the growing complexity and unpredictable of VUCA challenges intensifies the need for leadership practices that embolden teachers to go beyond their classroom responsibilities and play active role as leaders.
  - teacher leadership is associated with school effectiveness and improving student success.
  - teachers acting as catalysts for disseminating their skill, knowledge and the best practices to their colleague, albeit the boundaries of formal structures of school organization even if they do not have administrative title or formal responsibilities in the school process.

However, with greatest combinations of challenges be it in political, economic, social or technological realm that impacts and disrupts many of today's organization including school, many are of the belief that the role of teacher leaders as revolving inside and outside the classroom ((Khan & Malik, 2013; Nappi, 2014; Shah, 2016; Uribe-Florez et al., 2014; Waller et al., 2019). In fact, with a multi-dimensional education model: physical and online (Lemoine & Richardson, 2019), against a VUCA background, it requires not only the teaching skills and expertise of teachers but a collaborative efforts guided through clear direction and guidance of the principal and the teacher leader (Andrews & Lewis, 2002; Cooper, 1998) in enhancing student engagement. As suggested by Donohoo (2018), collective efficacy is a contributing factor to school success, and it is crucially so in a VUCA environment.

Still, these definitions do provide some insights into the essence of teacher leadership and how it is seen as a distinctive style of leadership. As a matter of fact, it is also considered as an important determinant of school quality for it is built on influence practiced in both formal and informal situations. This is due to the fact that colleagues have high regard for teacher leaders who have subject-area and instructional expertise while at the same time able to build a trusting and flourishing relationship with their peers and superiors (York-Barr & Duke, 2004). In sum, the development of teacher leadership is attributed to the teacher leaders' role in developing and improving school.

## VUCA and leadership development

Leadership, undoubtedly, is an important aspect in many spheres of human personal and professional life (Strielkowski and Chigisheva 2018). It is the ability to move others to want to struggle in achieving the shared goals (Kouzes & Posner, 2012). Needless to say, leadership development of teachers is seen as crucial as it helps to motivate accomplished teachers (Khan & Malik, 2013) to go beyond their classroom responsibilities and play active role as leaders (Shah, 2016). In fact, research done by Campbell, Lieberman and Yashkina (2016), to ascertain the value of teacher leadership development also testifies to the benefits of such program to the leadership and professional acumen of the teachers (Shah, 2016). Cowther (2009) also asserts the importance of leadership development program of teachers as it helps in building trusting and convincing relationship among members of school community which consequentially leads to school improvement and effectiveness.

However, the Covid-19 pandemic and other VUCA-characteristics events, seemed to have created significant challenges to the leadership capacities and capabilities of many, whereby “personal and work responsibilities can generate pressures that can affect the dynamics of teamwork and productivity” (Orejarena et al., 2019,p. 2). Thus, piecemeal initiatives to deal with the disrupted and arguably unprecedented events brought about by a number of interrelated phenomena are simply insufficient (Miller, Groth & Mahon, 2018). Furthermore, as highlighted by Miller et al. (2018), even the leaders themselves are affected mentally and emotionally by the VUCA environment. Thus, an integrated approach fueled by an understanding by various stakeholders through active and constructive interaction seems to be a better option (Kim, Beckman, & Agogino, 2018).

VUCA, which is now widely understood by many in various spheres of professional activities is an acronym that comes from the words:

- **VOLATILITY**—it occurs in situations when the established pattern of action is changed or violated. It indicates the difficulty of identifying and describing these changes in a pattern like manner as it used to be the case in a stable world where certainty about the course of events was the salient feature.
- **UNCERTAINTY**—associated with the lack of a sense of control and uncertainty about what will happen in the near future. It denotes the incapacity to read the present through the lenses of past.
- **COMPLEXITY**—which becomes evident when many volatilities appear. It reflects the difficulty in mastering or understanding the current intricacies underlying the external and internal environment of states and organizations.
- **AMBIGUITY**—in most cases it involves business ambiguity. It is rendered by the inability to affirm the solutions resulting from the above environment.

Source : Codreanu, 2016

Thus, focusing merely on the technical and technological aspects of competency development based on uni-dimensional theoretical perspective or a rigid organizational philosophy is insufficient to prepare the teacher leaders of the demand of a VUCA world. According to Horney, Pasmore, and O’Shea (2010), leaders need to make continuous changes to people, processes, technology, and structure, which may require a different set of competency to thrive and cope in a VUCA world. In sum, it is crucial to prepare the teacher leaders of the demand of a VUCA world since “it is a world where change is becoming faster, the future becomes less predictable, options increase exponentially and the way of thinking of these options must be different” (Orejarena, 2019,p.185-6).

## Teacher Leadership Competency Model (TLCM)

According to Bywater and Lewis (2019), leaders themselves need to be able to deal with the challenges of the VUCA world while at the same time “guide and navigate a team or an organization through this transition” (p.3). As such the importance of competency model in aligning organizational objectives, enhancing employee skills and identifying and retention of high potentials continue to be used by HR personnel in talent management initiatives (Martin, 2007). In fact, a study conducted by Yuet, Yusof and Mohamad (2016) on the use of

competency model concluded that it would benefit school principals in assessing the effectiveness of teacher leadership and teacher commitment in assuming new leadership roles in school change initiatives. There exists a quite a number of teacher leadership competency model or framework as shown in Table 2. As identified in previous literature there are Teacher Leadership Model by Katzenmeyer and Moller (2001& 2009), Teacher Leadership Framework by York-Barr and Duke (2004), Teacher Leadership Model by Muijs and Harris (2003), and Four Factor Model of Teacher Leadership by Angelle (2007).

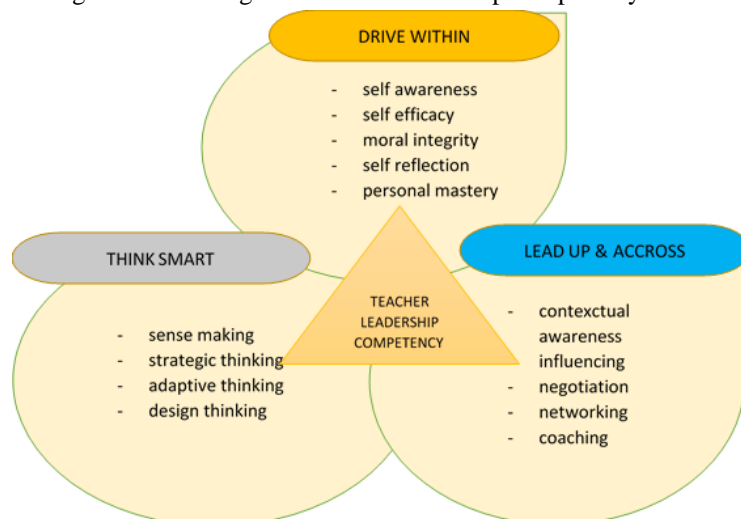
Table 2 : Teacher leadership competency model

**Some examples of teacher leadership competency**

<p>Teacher Leadership Model by Katzenmeyer and Moller (2001 &amp; 2009). Involves 7 dimensions:</p> <ul style="list-style-type: none"> <li>- Developmental focus</li> <li>- Recognition</li> <li>- Autonomy</li> <li>- Collegiality</li> <li>- Participation</li> <li>- Open communication</li> <li>- Positive environment</li> </ul>	<p>Teacher Leadership Framework by York-Barr and Duke (2004). Focus on 7 components:</p> <ul style="list-style-type: none"> <li>- Characteristic of teacher leadership</li> <li>- Types of leadership work</li> <li>- Work climate that support teacher leadership</li> <li>- The way teachers lead</li> <li>- The target of leadership influence</li> <li>- Intermediary results of change in instructional practices</li> <li>- Student learning</li> </ul>
<p>Teacher Leadership Model by Muijs and Harris (2003). Involves 4 dimensions:</p> <ul style="list-style-type: none"> <li>- Teacher leaders brokering role</li> <li>- Participative leadership</li> <li>- Emphasises the teachers' role as a mediator</li> <li>- Teachers' role as an instructional leader</li> </ul>	<p>Four Factor Model of Teacher Leadership by Angelle (2017). There are 4 elements:</p> <ul style="list-style-type: none"> <li>- Sharing expertise</li> <li>- Sharing leadership</li> <li>- Supra practitioner</li> <li>- Principal Selection</li> </ul>

Nevertheless, as pointed earlier, the VUCA phenomenon posts as a challenging threat to the effectiveness of school that a new set of competencies needed to be developed among teacher leaders to enable them to lead effectively. Thus, our intention is to propose an integrated conceptual model of teacher leadership competencies that could serve as guidelines for designing a leadership program for the development of teacher leaders (Figure 1). Through the right development program, we believe, it will help to inculcate the understanding of the complexities of the educational world against the VUCA background and further triggers the motivation of the teacher leaders in enhancing their skills and knowledge. Our understanding is that leadership development should suit the context of experience so as to become meaningful and effective.

Figure 1 : An integrated teacher leadership competency model



In developing this model, we firstly, identify teacher leaders as those who are subject-matter experts or master trainers of their subjects, regardless of whether they hold a formal position/title or not. As such, we believe that the affective, cognitive and behavioral aspects of leadership development should be integrated to provide these teacher leaders with a strong foundation to lead and teach in a VUCA world. This is because our conceptual model is based on three basic principles: i. It is integrated, ii. It is contextualized, and iii. It is role-based. The three important aspects of competency development (i.e affective, cognitive, behavioural) make up the three important domains of this model, categorized as *Drive Within*, *Think Smart* and *Lead Up and Across*. Based on literatures from international and domestic contexts, we see the essential competencies for the development of teacher leader as subsumed under these three domains

The rationales for the three domains are given as follow:-

**Domain 1: Drive Within**

We believe that leadership should be self-determined and conscious. Thus, the passion for leading should be ignited within the teacher leaders that will motivate them to take responsibility in ensuring the potential of their students be realized. Therefore, they need to be aware of their own state of well-being in order to be able to adapt and be resilient towards the challenges faced and be responsible for their own learning.

**Domain 2 – Think Smart**

It is crucial for teacher leaders to function effectively in ensuring the needs of their students and that the expectations of other stakeholder are met. As such, they need to able to plan and strategize, be agile and innovative to support the excellence in teaching and create equitable learning environment for their students.

**Domain 3- Lead Up and Across**

Teacher leaders do not operate in isolation. It is important that they are able to make connection with others; among teachers and with other stakeholders. However, as teacher leadership is more about influence than authority, they need to be able to empower teacher teams and encourage cross-boundary learning. They need to also be able to engage other important stakeholders, both within and outside the school.

The definitions of the competencies are given below:-

**1. Drive Within**

*Self awareness* : the ability to focus on oneself and how one’s actions, thoughts, or emotions do or don't align with one’s internal values.

*Self efficacy* : a belief in one's capacity to execute certain behaviors necessary to produce specific performance attainments.

Self reflection : the ability to evaluate one's own cognitive, emotional, and behavioural processes.

*Personal mastery* : personal growth through principles of purpose, vision, belief, commitment and knowing oneself.

## **2. Think Smart**

*Sense making*: the action or process of making sense of or giving meaning to something, especially new developments and experiences.

*Strategic thinking* : a mental or thinking process applied in the context of achieving a goal or set of goals in certain endeavor.

*Adaptive thinking* : the ability to recognize unexpected situations, quickly consider various possible responses, and decide on the best one.

*Design thinking* : the ability to design practical and creative problem-solving methods.

## **3. Lead up and across**

*Contextual awareness* : an ability to recognize that leadership is situated in a particular context, especially knowledge of the real world scenarios and situations.

*Influencing* : the ability to bring people around to one's way of thinking about a certain topic, without force or coercion.

*Negotiating* : ability to use a suitable method to settle differences.

*Networking* : the ability to develop and maintain relations, alliances and coalitions within and outside the organization.

*Coaching* : the ability to facilitate the development of others by providing clear performance feedback.

In sum, this competency model offers some insight on the important role of teacher leadership and the salient aspects of competency development of teacher leaders. Our model actually built on previous work of other researchers but is based against the current VUCA background. It is transformative in the sense that it challenges the teacher leaders' own values and worldview. This is instrumental in developing a critical moral consciousness. This model also acknowledges the importance of cognitive prowess as a mark of an effective leader. That said, interpersonal competencies can also be a challenge to teacher leaders, and thus, need to be developed for successful execution of tasks. Hence, our model recognizes the importance of integrating these three important aspects; i.e cognitive, affective and behavior, in developing the competencies of teacher leaders.

## **Conclusion**

Teacher leadership development is crucial in today's VUCA world. As such, leadership development program should be tailored to suit the need of responding to the challenges of a VUCA environment. A new teacher leadership competency model is needed as a guideline to fulfill this need. Nevertheless, this conceptual model is, of course, merely a model. Future research should be empirically done to gauge the perceptions of various stakeholders on the suitability of this model in different practical situations. We intend to do this and hope that others will also do so. In saying this, we hope policy makers, in particular, to test its efficacy. We also encourage

HR personnel to consider the model when planning a leadership development program. It is hoped that this paper would trigger such endeavours.

## References

1. Andrews, D., & Lewis, M. (2002). The experience of a professional community: Teachers developing a new image of themselves and their workplace. *Educational Research*, 44(3), 237-254.
2. Angelle, P. S., & DeHart, C. A. (2011). Teacher perceptions of teacher leadership: Examining differences by experience, degree, and position. *Nassp Bulletin*, 95(2), 141-160.
3. Bowman, R. F. (2004). Teachers as leaders. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 77(5), 187-189.
4. Boyaci, A., & Oz, Y. (2017). Evolution of Teacher Leadership as a Challenging Paradigm in Rethinking and Restructuring Educational Settings. *Teacher Empowerment Toward Professional Development and Practices*, 3-19.
5. Buckner, K. G., & McDowelle, J. O. (2000). Developing teacher leaders: Providing encouragement, opportunities, and support. *NASSP bulletin*, 84(616), 35-41.
6. Bywater, J., & Lewis, J. (2019). Leadership: What competencies does it take to remain engaged as a leader in a VUCA world. *Assessment & Development Matters*, 11(3), 2-9.
7. Campbell, C., Lieberman, A., & Yashkina, A. (2016). *Teacher Learning & Leadership Program. Research Report for 2015-2016*.
8. Codreanu, A. (2016). A VUCA action framework for a VUCA environment. *Leadership challenges and solutions. Journal of Defense Resources Management (JoDRM)*, 7(2), 31-38.
9. Cooper, R. (1998). *Socio-Cultural and Within-School Factors That Affect the Quality of Implementation of School-Wide Programs. Report No. 28*.
10. Crowther, F., Ferguson, M., & Hann, L. (2009). *Developing teacher leaders: How teacher leadership enhances school success*. Corwin Press.
11. Cheung, R., Reinhardt, T., Stone, E., & Little, J. W. (2018). Defining teacher leadership: A framework. *Phi Delta Kappan*, 100(3), 38-44.
12. Donohoo, J. (2018). Collective teacher efficacy research: Productive patterns of behaviour and other positive consequences. *Journal of educational change*, 19(3), 323-345.
13. Horney, N., Pasmore, B., & O'Shea, T. (2010). *Leadership agility: A business imperative for a VUCA world People & Strategy*.
14. Katzenmeyer, M., & Moller, G. (2009). *Awakening the sleeping giant: Helping teachers develop as leaders*. Corwin Press.
15. Khan, S. & Malik, S. (2013). Is teacher leadership a fantasy or reality? A review. *Journal of Educational and Instructional Studies in the World*, 3(3), 66-72.
16. Kim, E., Beckman, S. L., & Agogino, A. (2018). Design roadmapping in an uncertain world: implementing a customer-experience-focused strategy. *California Management Review*, 61(1), 43-70.
17. Kouzes, J., & Posner, B. (2012). *The leadership challenge: How to make extraordinary things happen*. Atlanta, GA: Better World Books.
18. Krawczyńska-Zauchna, T. (2019). A new paradigm of management and leadership in the VUCA world. *Zeszyty Naukowe. Organizacja i Zarządzanie/Politechnika Śląska*.
19. Martin, K. (2007). *Competency management: The link between talent management and optimum business results*. Aberdeen Group Research Report available online at [www.Aberdeen.com](http://www.Aberdeen.com).
20. Millar, C. C., Groth, O., & Mahon, J. F. (2018). Management innovation in a VUCA world: Challenges and recommendations. *California management review*, 61(1), 5-14.
21. Muijs, D., & Harris, A. (2006). Teacher led school improvement: Teacher leadership in the UK. *Teaching and teacher education*, 22(8), 961-972.
22. Murphy, J. (Ed.). (2005). *Connecting teacher leadership and school improvement*. Corwin Press.
23. Nappi, J. S. (2014). The teacher leader: Improving schools by building social capital through shared leadership. *The Delta Kappa Gamma Bulletin*, 80(4), 29-34.
24. Nguyen, D., Harris, A., & Ng, D. (2019). A review of the empirical research on teacher leadership. *Journal of Educational Administration*, 58(1), 60-80.

25. Nowacka, A., & Rzemieniak, M. (2022). The Impact of the VUCA Environment on the Digital Competences of Managers in the Power Industry. *Energies*, 15(1), 185.
26. Orejarena, H., Zambrano, O., & Carvajal, M. (2019, October). Emotional intelligence and its influence on organizational leadership in the VUCA world. In *Proceedings of the 4th International Conference on Social, Business, and Academic Leadership*.
27. Schott, C., van Roekel, H., & Tummers, L. G. (2020). Teacher leadership: A systematic review, methodological quality assessment and conceptual framework. *Educational Research Review*, 31, 100352.
28. Shah, S. R. A. (2016). Teacher leadership: A case study of teacher leaders' professional development in an EFL institute of a Saudi Arabian university.
29. Strielkowski, W., & Chigisheva, O. (2018). Social, economic, and academic leadership for sustainable development of business and education in the future: an introduction. In *Leadership for the Future Sustainable Development of Business and Education* (pp. 3-8). Springer, Cham.
30. Thornton, C. A., Langrall, C. W., Jones, G. A., & Swafford, J. O. (2001). The Emergence of Teacher Leaders through Professional Development.
31. Uribe-Florez, L., Al-Rawashdeh, A., & Morales, S. (2014). Perceptions about teacher leadership: Do teacher leaders and administrators share a common ground? *Journal of International Education and Leadership*, 4(1), 1-15.
32. Waller, R. E., Lemoine, P. A., Mense, E. G., Garretson, C. J., & Richardson, M. D. (2019). Global higher education in a VUCA world: Concerns and projections. *Journal of Education and Development*, 3(2), 73.
33. Wenner, J. A., & Campbell, T. (2017). The theoretical and empirical basis of teacher leadership: A review of the literature. *Review of educational research*, 87(1), 134-171.
34. York-Barr, J., & Duke, K. (2004). What does the research tell us about teacher leadership. *Review of Educational Research*, 74(3), 255-316.
35. Yuet, F. K. C., Yusof, H., & Mohamad, S. I. S. (2016). Development and validation of the teacher leadership competency scale. *Malaysian Journal of Learning and Instruction*, 13(2), 43-69.
36. Alwi, A., Nordin, M.N.B. (2022). Applying Information Technology-Based Knowledge Management (KM) Simulation in the Airline Industry. *International Journal of Mechanical Engineering*, 2022, 7(1), pp. 1249–1252
37. [Bin Nordin, M.N.](#), [Rajoo, M.](#), [Maidin, S.S.](#), [Sulaiman, M.S.S.](#), [Mosbiran, N.F.](#) (2022). Competencies On Implementations Of 21st Century Technology on Teaching, Learning and Assessment. *Res Militaris*, 2022, 12(2), pp. 7320–7331
38. [Bin Nordin, M.N.](#), [Rajoo, M.](#), [Maidin, S.S.](#), [Sulaiman, M.S.S.](#), [Mosbiran, N.F.](#) (2022). Competencies On Implementations Of 21st Century Technology on Teaching, Learning and Assessment. *Res Militaris*, 2022, 12(2), pp. 7320–7331
39. [Bin Shafie, A.S.](#), [Binti Rubani, S.N.K.](#), [Nordin, M.N.](#), [Ibrahim, E.](#), [Talip, S.](#) (2022). Micro-Pits Effectiveness for Controlling Friction In Planestrain Extrusion. *International Journal of Mechanical Engineering*, 2022, 7(1), pp. 1270–1280
40. [Jaya, S.](#), [Zaharudin, R.](#), [Hashim, S.N.A.](#), [Mapjabil, J.](#), [Nordin, M.N.](#) (2021). Employing Design and Development Research (DDR) Approach in Designing Next Generation Learning Spaces (NGLS) In Teachers' Pedagogy and Technology Tools. *Review of International Geographical Education Online*, 2021, 11(7), pp. 1237–1246
41. [Mizan, M.Z.](#), [Lada, S.](#), [Hamzah, A.A.](#), [Esam, A.](#), [Nordin, M.N.](#) (2021). Movement Control Order (MCO): An Syar'iyah Political Approach. *Review of International Geographical Education Online*, 2021, 11(7), pp. 1225–1230
42. Mosbiran, N, F, B, M.; Mustafa, M, Z, B.; and Nordin, M, N, B. (2021) Special Elements and Values Needed in Leadership for Special Education. *Review of International Geographical Education (RIGEO)*, 11(4), 712-722. doi: 10.33403/rigeo. 8006784
43. [Mosbiran, N.F.](#), [Mustafa, M.Z.](#), [Nordin, M.N.](#), [Abenoh, N.A.](#), [Saimy, I.S.](#) (2021). Analysis of the Study of Individual Education Plans in Special Education. *Review of International Geographical Education Online*, 2021, 11(7), pp. 1231–1236
44. Norazmi, N., Zaid, M. & Abdul Rasid, A. R. (2019). The Practice of Headmasters' Leadership and Its Effect on Job Satisfaction of Special Education Integration Program (PPKI) Teachers in Johor, Malaysia. *Universal Journal of Educational Research* 7.9 (2019): 2008-2014. DOI: 10.13189/ujer.2019.070923.
45. Norazmi, N., Zaid, M. & Abdul Rasid, A. R. (2020). Relationship between Headmasters' Leadership, Task Load on Special Education Integration Programme Teachers' Job Satisfaction. *Universal Journal of Educational Research* 8(8):3398-3405
46. [Nordin, M.N.](#), [Alwi, A.](#) (2022). Digital Video Broadcasting Implementation in WSN Environments. *International Journal of Mechanical Engineering*, 2022, 7(1), pp. 1256–1259
47. [Nordin, M.N.](#), [Alwi, A.](#) (2022). Knowledge Management Model Implementation in Electronic Devices. *International Journal of Mechanical Engineering*, 2022, 7(1), pp. 1253–1255

48. [Nordin, M.N.B.](#), [Maidin, S.S.](#), [Rajoo, M.](#), [Magiman, M.M.](#), [Mosbiran, N.F.](#) (2022). International Frameworks For 21st Century Competences: Comparative Education. *Res Militaris*, 2022, 12(2), pp. 7332–7344
49. Rosnee Ahad, Mohamad Zaid Mustafa, Suhaimi Mohamad, Nur Hanim Saadah Abdullah, Mohd Norazmi Nordin (2021). Work Attitude, Organizational Commitment and Emotional Intelligence of Malaysian Vocational College Teachers. *Journal of Technical Education and Training* Vol. 13 No. 1 (2021): 15-21.
50. [S, S.M.](#), [Yusoff, M.Y.M.](#), [Rahmat, R.](#), [Yassin, Y.N.H.M.](#), [Nordin, M.N.](#) (2021). Asset Tokenization: A Simulation Study. *Review of International Geographical Education Online*, 2021, 11(7), pp. 1219–1224
51. Zaid, M., Norazmi, N. & Abdul Rasid, A. R. (2020). Regression between Headmaster Leadership, Task Load and Job Satisfaction of Special Education Integration Program Teacher. *Universal Journal of Educational Research* 8.4 (2020) 1356 - 1362. Doi: 10.13189/ujer.2020.080428.
52. Zaid, M., Norazmi, N. & Abdul Rasid, A. R. (2020). Structural Equation Modelling Using AMOS: Confirmatory Factor Analysis for Taskload of Special Education Integration Program Teachers. *Universal Journal of Educational Research*, Vol 8 (Jan, 2020) No 1: 127-133. DOI: 10.13189/ujer.2020.080115.